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 Deposit Account Number: 502431
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02/20/04

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DATE	SEQ	POSTING REF	ATTORNEY DOCKET TXT NBR	FEE CODE	AMT	BAL
02/10	784	78365257	040158-10127001		\$335.00	\$5,828.00
02/20	1	09871089	ASH134 P2	1253	\$980.00	\$4,848.00
02/20	560	76411724	040158-08127004		\$150.00	\$4,698.00
02/24	3	10473844	000704 01129204		-\$30.00	\$4,728.00

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\$6,163.00	\$1,465.00	\$30.00	\$4,728.00

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043516
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TELECOPY MESSAGE

TO: 703/308-6778

FROM: Bruce E. Peacock

DATE: March 16, 2004

NUMBER OF PAGES (INCLUDING COVER PAGE): 15

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Papers Amendment Transmittal; Amendment

Applicant/Registrant Creamer et al.

Title Fiber Reinforced Aerated Concrete and Method

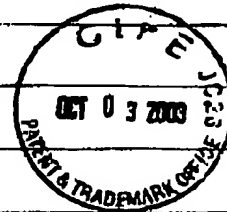
Serial No./Reg. No. 09/871,089

Docket No. 020356: 134P2

Date Due 10/1/03

bep/jjs

10/1/03



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October 1, 2003

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(1918-1977)

In re Application of

Inventor : Steven R. Creamer et al.
Serial No. : 09/871,089
Filed : May 31, 2001
Title : Fiber Reinforced Aerated Concrete
And Method of Making Same
Docket No. : 020356 134P2
Examiner : Elizabeth D. Wood
Art Unit : 1755
Customer No. 33805Box Non-Fee Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

Sir:

Transmitted herewith is the following:

XX Amendment in the above-identified patent applicationXX Please charge our Deposit Account No. 50-2431 in the amount of \$ 0.00. The Commissioner is hereby authorized to charge any additional fees under 37 C.F.R. 1.16 and 1.17 which may be required by this paper, or to credit any overpayment, to such account. Two copies of this sheet are enclosed.

CERTIFICATE OF MAILING

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October 1, 2003

(Date of Deposit)

Joyce J. Skulina

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Respectfully submitted,
WEGMAN, HESSLER & VANDERBURGBy: Bruce E. PeacockBruce E. Peacock
Reg. No. 28,457

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of:

Applicants : Steven R. Creamer et al.
Serial No. : 09/871,089
Filed : May 31, 2001
Title : FIBER REINFORCED AERATED CONCRETE
AND METHOD OF MAKING SAME
Docket : 020356 134P2
Examiner : Elizabeth D. Wood
Art Unit : 1755
Customer No.: 33,805

Mail Stop Non-Fee Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Madam:

AMENDMENT

In response to the Office Action mailed July 1, 2003, please amend the above-identified application as follows.

Serial No. 09/871,089

-2-

IN THE CLAIMS

Kindly cancel claims 1-17 without prejudice and insert claims 18-32 in lieu thereof.

Claims 1-17 (canceled)

18. (new) Autogenously curable aerated concrete composition comprising:
- (1) about 100 parts by weight of non-aqueous components, said non-aqueous components including
 - (a) about 20 - about 80 wt% fly ash;
 - (b) about 10 - about 60 wt% Portland cement;
 - (c) about 0.001 - about 2.00 wt% reinforcing fiber;
 - (d) about 0.0001 - about 2.00 wt% Al activating agent;
 - (e) about 0.2 - 2.0 wt% of CaCl₂ accelerator; and
 - (2) water, said water being present in an amount of about 20 - about 60 % based on said 100 parts by weight of said non-aqueous components.
19. (new) Composition as recited in claim 18 wherein said Al activating agent comprises Al particles in a paste mixture.
20. (new) Composition as recited in claim 18 further comprising as a non-aqueous component, a thermal shrinkage control agent (f) present in an amount of 0.2 - about 1.5%.
21. (new) Composition as recited in claim 20 wherein said thermal shrinkage control agent (f) comprises a polyvinylacetate polymer/vinylacetate dibutylmaleate copolymer dispersion.
22. (new) Composition as recited in claim 18 wherein said fly ash comprises type "F" fly ash.

Serial No. 09/871,089

-3-

23. (new) Composition as recited in claim 18 wherein said fly ash is present in an amount of about 45-70 wt%, said Portland Cement being present in an amount of about 25-50%, said fibers being present in an amount of about 0.005-0.020 wt%, and said Al activating agent being present in an amount of about 0.001-0.020 wt%.
24. (new) Method for making a cementitious building material comprising providing the components of claim 18, mixing said non-aqueous components and water to form a cementitious mixture, placing said cementitious mixture into a mold having a volume of at least about 32 cubic feet, curing said cementitious mixture by autogenous heating in said mold at a temperature of about 150°F - about 180°F to form a cured material, removing said cured material from said mold and cutting said cured material into desired building material shapes.
25. (new) Method as recited in claim 24 further comprising curing said mixture by autogenously heating said mixture in said mold at time and temperature conditions as shown in Fig. 3.
26. (new) Method as recited in claim 24 further comprising, after said cutting, forming an assembly of said cut building material shapes and wrapping said assembly with a vapor impervious means to maintain moisture in said cut building material shapes to impart enhanced compressive strength to said shapes, wherein said shapes are blocks or panels.
27. (new) Method as recited in claim 26 further comprising, after said wrapping, allowing said wrapped assembly to set in said wrapped condition for at least three days.
28. (new) Method for making an assembly of aerated concrete building shapes comprising
- a) providing non-aqueous components including fly ash, Portland cement, and foam activating agent;

Serial No. 09/871,089

-4-

- b) mixing said non-aqueous components with water to form a cementitious mixture;
- c) placing said cementitious mixture in a mold having a volume of at least about 32 cubic feet;
- d) autogenously heating said mixture in said mold at time and temperature conditions set forth in Fig. 3 to form a cured material;
- e) removing said cured material from said mold; and
- f) cutting said cured material from step e) into desired shape.

29. Method for making an aerated, cementitious building material comprising

- a) providing non-aqueous components including fly ash, Portland cement, and foam activator;
- b) mixing said non-aqueous components with water to form a cementitious mixture;
- c) placing said cementitious mixture in a mold having a volume of at least about 32 cubic feet;
- d) curing said cementitious mixture by autogenous heating in said mold at a temperature of about 150-180°F to form a cured material;
- e) removing said cured material from said mold and cutting said cured material into desired building shapes.

30. Method as recited in claim 29 wherein said foam activator comprises an Al paste and a surfactant, and wherein said fly ash, Portland cement and water are pre-mixed to form a slurry, said method further comprising the step of controlling temperature of said slurry to about 112-118°F to provide a temperature controlled slurry and then adding said foam activator to said temperature controlled slurry.

31. Method as recited in claim 30 further comprising adding CaCl₂ accelerator to said temperature controlled slurry.

Serial No. 09/871.089

-5-

32. Method as recited in claim 31 wherein said building shapes have compressive strengths of greater than about 350 psi and flexural strengths of from about 60-200 psi at densities of from 32 lbs. ft³ to 39 lbs. ft³.

Serial No. 09/871,089

-6-

REMARKS

Claims 1-17 have been canceled herein without prejudice, and claims 18-32 have now been added. The newly added claims are not directed toward any new matter. In this regard, composition claims 18-23 find full support, *inter alia*, on pages 2-4, 14, and in original claim 4 of the specification, and method claims 24-32 find support, *inter alia*, on pages 5-6 of the application and on page 9, line 20 to page 13 and in the drawing figures.

Turning now to independent composition claim 18, an autogenously curable aerated concrete composition is claimed. The composition has non-aqueous components that include fly ash, Portland Cement, reinforcing fibers, aluminum activating agent, and calcium chloride accelerator. Additionally, water is present in the composition in an amount of about 20-60% based on 100 parts by weight of the non-aqueous components present in the curable concrete composition.

Independent method claim 24 indicates that the components set forth in claim 18 are mixed in a mold having a volume of at least about 32 cubic feet. (See page 5, lines 2-3 of the instant application). The mixture is autogenously cured in the mold at temperatures of about 150°F - 180°F. Then, the cured material is removed from the mold and cut into the desired dimensions for building material shapes.

Dependent method claim 25 indicates that the autogenous curing in the mold is conducted under time and temperature conditions as set forth in Fig. 3 of the drawings. Also, in another feature of the claimed method, as set forth in dependent claim 26, the cut building material shapes are formed into an assembly and then wrapped with a vapor impervious means. This wrapping maintains the moisture in the cut building material shapes to impart enhanced compressive strength thereto and inhibit drying shrinkage. (See page 11, lines 2-7).

Independent method claim 28 is directed, *inter alia*, to a method in which fly ash, Portland cement, and foam activator are mixed with water, placed in a mold of at least 32 cubic feet, autogenously heated at the time and temperature conditions shown in Fig. 3 to cure, removed from the mold and then cut.

Serial No. 09/871,089

-7-

Independent method claim 29 pertains to methods for making aerated cementitious building materials from fly ash, Portland cement and foam activator. Similar to claim 24, the mixture is placed in a mold having a volume of at least about 32 cubic feet. The material is cured autogenously at temperatures of about 150-180°F. The cured materials are cut into desired building shapes.

Claim 30 depends from claim 29 and indicates that the foam activator comprises Al paste and surfactant. Further, fly ash, Portland, and water are pre-mixed to form a temperature controlled slurry having a temperature of about 112-118°F. The foam activator is then added to this temperature controlled slurry. Support for this claim can be specifically seen at page 9, l. 20, page 10, l. 17.

Dependent claim 31 indicates that CaCl₂ accelerator is added to the temperature controlled slurry and dependent claim 32 sets forth the resulting compressive and flexural strengths of the formed products in accordance with the disclosure at Table 1 and 2, page 11 and in original claim 16.

All of the claims stand rejected on art based grounds in light of Castro 6,203,609 or Plungian 4,077,809. Turning first to Castro, there is no hint or suggestion therein directed toward the specific calcium chloride accelerator now set forth in independent claim 18.

Turning now to Plungian 4,077,809, this discloses a cellular product which may include a foaming concentrate comprising various surfactants and guar gum as set forth at column 3, lines 35-40 of the '809 reference. It is respectfully submitted that the skilled artisan, after a reading of the '809, would not be led in the direction of utilizing an aluminum based activator as required in the instant composition claims. More specifically, the criticality of the combination of guar gum and vinyl acetate acrylic copolymer emulsion is shown at column 4, lines 23-43 of the '809 reference. This particular combination is utilized to enhance the stability of the foams that are formed in accordance with this prior art reference via the utilization of the specific foaming concentrates set forth at column 3 of the '809. It would not be logical for the skilled artisan, after a fair reading of the '809, to substitute a new, aluminum based activating agent, into the disclosure

Serial No. 09/871,089

-8-

of the '809 after the '809 inventor had found that stability of the foams was enhanced via the criticality of the combination of guar gum and vinyl acetate acrylic copolymer emulsion.

Additionally, the '809 reference patent is not at all suggestive of the utilization of a calcium chloride accelerator as required herein in the composition claims at bar.

Turning now to the method claims, neither of the cited references is suggestive of utilizing a mold having a volume of at least about 32 cubic feet in a process for autogenous curing of cementitious mixture. This recitation appears in all of the independent method claims, i.e., claim 24, claim 28 and claim 29. As to the provision of molds of this large volume, the instant application indicates that formation of a large mass of cementitious material is desirable so that the heat is distributed throughout the curable material. This helps to ensure that the temperature of the mixture in the mold increases to between about 150°F and 180°F. (See page 5, last paragraph). This elevated temperature greatly enhances the autogenous curing and ultimate strength of the product.

The prior art is in no way suggestive of autogenous curing of the material in such a large mold followed by cutting of the cured material into desired building material shapes as is recited in claims 24, 28 and 29. In contrast, products made in conventional autoclave cured processes are often cut in their uncured or "green" state. This necessitates use of expensive cutting equipment and results in longer, uneven cut surfaces.

Neither Castro or Plungian '809 is suggestive of the wrapping of the cut assembly of formed shapes with a vapor impervious means to maintain moisture in the cut building material shapes to impart enhanced compressive strength to those blocks (see claim 26).

The art is also deficient in making any suggestion of the pre-mixing of fly ash, Portland cement and water and control of this pre-mix slurry to a temperature of about 112-118°F with subsequent addition of the foam activator to the pre-mix slurry as is now indicated in dependent claim 30. As the specification indicates, this step is desirable to control the "reaction of the Al and the rise of the Product" and "plays a key role in the ultimate temperatures that are obtained." (Page 9, l. 20-31).

Serial No. 09/871,089

-9-

The compositions and methods of the invention produce aerated concrete in a quick and economical manner so that the products made in accordance with the invention can favorably compete in the marketplace with conventional autoclave cured concrete products and traditional building materials such as wood.

For the above noted reasons, the solicited method claims do not represent "simply known" "conventional" methods. As the application itself indicates, the compositions and methods are of "significant commercial interest" and result in a quickly setting durable, light weight aerated concrete product. The processes provide considerable savings in investment requirements compared to autoclave methods (See page 15).

It is respectfully submitted that all claims are in full conformity with the patent statutes. A prompt indication of allowance is earnestly solicited.

The Examiner is respectfully requested to contact the undersigned at the telephone number below should any further questions arise during the course of examination of this patent application.

Respectfully submitted,

WEGMAN, HESSLER & VANDERBURG

Date: 10/1/03

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October 1, 2003

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(1916-1977)

In re Application of

Inventor : Steven R. Creamer et al.
Serial No. : 09/871,089
Filed : May 31, 2001
Title : Fiber Reinforced Aerated Concrete
And Method of Making Same
Docket No. : 020356 134P2
Examiner : Elizabeth D. Wood
Art Unit : 1753
Customer No. 33805

Box Non-Fee Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

Sir:

Transmitted herewith is the following:

XX Amendment in the above-identified patent application

XX Please charge our Deposit Account No. 50-2431 in the amount of \$0.00. The Commissioner is hereby authorized to charge any additional fees under 37 C.F.R. 1.16 and 1.17 which may be required by this paper, or to credit any overpayment, to such account. Two copies of this sheet are enclosed.

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01 FC:1253 980.00 CR
Adjustment date: 09/25/2004 SDIRETA1
02/20/2004 PFENWELL 00000001 502431 09871089
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October 1, 2003

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Jorge J. Sigulim

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Jorge J. Sigulim
(Signature of person mailing paper or fee)

Respectfully submitted,
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By: Bruce E. Peacock
Bruce E. Peacock
Reg. No. 28,457

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March 15, 2004

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MARTIN J. WEGMAN
(1918-1977)

* California and Missouri only
** Registered Patent Attorney

VIA FACSIMILE 703/308-6778

U.S. Patent and Trademark Office
Commissioner for Patents
Alexandria, Virginia 22313-1450

Attention: Refunds

Re: Deposit Account No. 502431
Statement Date: February 29, 2004
U.S. Patent Application 09/871,089 filed May 31, 2001
Our Docket: 020356 134P2

Dear Sir or Madam:

Enclosed is a copy of the Monthly Statement of Deposit Account which reflects the balance of our account as of February 29, 2004.

On October 1, 2003, we filed a response to the first Office Action in this application dated July 1, 2003. (A copy of amendment and stamped acknowledgement card enclosed.) We met the three-month deadline. Unfortunately, the Response was misplaced. At the request of the Examiner, Elizabeth Wood, we sent a copy of our Amendment again via facsimile on February 12, 2004. Our deposit account was charged \$980, three-month charge for filing an extension on an Office Action.

In light of the fact that the amendment was filed on time, we do not believe that our deposit account should have been charged for someone else's error. Therefore, please refund our deposit account in the amount of \$980.

Commissioner for Patents
March 15, 2004
Page 2

Thank you for your assistance. We look forward to having this matter resolved in a timely fashion. Please contact me at 216/642-3342 if you have any questions.

Sincerely,
WEGMAN, HESSLER & VANDERBURG



Bruce E. Peacock

BEP/bas
Enclosures